BEFORE
SOUTH CAROLINA PUBLIC SERVICE COMMISSION
DOCKET NO. 2013-59-E

In the Matter of:

Application of Duke Energy	**)**	
Carolinas, Inc. for Adjustment	**)**	**Docket No. 2013-59-E**
of Rates and Charges Applicable	**)**	
to Electric Service in South Carolina	**)**	

Direct Testimony

of

Kevin W. O'Donnell, CFA

On Behalf of

South Carolina Energy Users Committee

July 1, 2013

BEFORE
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DIRECT TESTIMONY OF KEVIN W. O'DONNELL, CFA

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Kevin W. O'Donnell. I am President of Nova Energy Consultants, Inc. My business address is 1350 Maynard Rd., Suite 101, Cary, North Carolina 27511.

Q. ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS PROCEEDING?

A. I am testifying on behalf of the South Carolina Energy Users Committee (SCEUC), which is an industrial trade association in South Carolina. Many of SCEUC's members take retail electric service from Duke Energy Carolinas (DEC or the Company) and will be impacted by the proceedings in this case.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND RELEVANT EMPLOYMENT EXPERIENCE.

A. I have a Bachelor of Science in Civil Engineering from North Carolina State University and a Master of Business Administration from Florida State University. I earned the designation of Chartered Financial Analyst (CFA) in 1988. I have worked in utility regulation since September 1984, when I joined the Public Staff of the North Carolina Utilities Commission (NCUC). I left the NCUC Public Staff in 1991 and have worked continuously in utility consulting since that time, first with Booth & Associates, Inc. (until 1994), then as Director of Retail Rates for the North Carolina Electric Membership Corporation (1994-1995), and since then in

my own consulting firm. I have been accepted as an expert witness on rate of return, cost of capital, capital structure, cost of service, and other regulatory issues in general rate cases, fuel cost proceedings, and other proceedings before the North Carolina Utilities Commission, the South Carolina Public Service Commission (Commission), the Virginia State Commerce Commission, the Minnesota Public Service Commission, and the Florida Public Service Commission. In 1996, I testified before the U.S. House of Representatives, Committee on Commerce and Subcommittee on Energy and Power, concerning competition within the electric utility industry. Additional details regarding my education and work experience is set forth in Appendix A to my direct testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony in this proceeding is to present to the Commission my findings as to the proper return on equity and capital structure for use in this proceeding; the proper cost of service to employ for use in rate design; and to address various accounting adjustments that are part of this rate case request by Duke Energy Carolinas (DEC).

Q. PLEASE SUMMARIZE YOUR PRIMARY RECOMMENDATIONS IN THIS CASE.

A. My recommendations in this case are as follows:

- the proper return on equity on which to set rates for DEC in this proceeding is 9.0%;
- the proper capital structure to use in this proceeding is 53% common equity and 47% long-term debt;
- the cost rate for long-term debt should be the DEC embedded cost of debt;

- the overall rate of return that should be granted DEC in this case is 7.26%;
- the return on equity recommended by Company Witness Hevert is excessive, unreasonable, and not indicative of current market conditions;
- DEC should be required to normalize test year sales as part of this rate case;
- DEC's request for an additional $8.7 million in storm expenses should be denied;
- the proper cost allocation methodology for use in this proceeding is the Summer Coincident Peak (Summer CP) methodology; and
- the rate design for the OPT and MP rates should be amended to be more accommodating to customers that cannot shift load to the off-peak hours.

Q. HOW IS YOUR TESTIMONY STRUCTURED?

A. My testimony is divided into six sections as follows:

I. Overview of Southeastern U.S. Electric Utility Industry

II. Economic and Regulatory Policy Guidelines for A Fair Rate of Return

III. Cost of Common Equity

A. Discounted Cash Flow (DCF) Analysis

B. Comparable Earnings Analysis

C. Return on Equity Recommendation

D. Capital Structure

E. Review of Company Witness Hevert's Testimony

IV. Accounting Adjustments

V. Rate Design

VI. Summary

I. OVERVIEW OF SOUTHEASTERN UNITED STATES ELECTRIC UTILITY INDUSTRY

Q. MR. O'DONNELL, PLEASE PROVIDE A SUMMARY OF THE CURRENT STATUS OF THE ELECTRIC UTILITY INDUSTRY IN THE SOUTHEASTERN UNITED STATES.

A. In the past 5 years, virtually all of the large investor-owned utilities in the southeastern United States have undergone extensive plant construction programs. Georgia Power and South Carolina Electric and Gas are both building nuclear plants whereas DEC has just completed the Cliffside Coal Plant and two major natural gas-fired generation projects. Progress Energy is in the process of completing construction on its coal-to-gas conversion of several generation plants.

Q. HOW ARE THE ON-GOING CONSTRUCTION PROGRAMS IN THE SOUTHEAST AFFECTING ELECTRIC COSTS IN THE REGION?

A. As a result of the new generation being constructed, all the utilities are experiencing rate pressures to pay for new generation. Unfortunately, the construction of this generation is causing economic hardship to all consumers. Manufacturers, in particular, are finding it very difficult to sustain rate increases and continue to operate in the United States. Some manufacturers are beginning to feel pressure to look outside the confines of their local electric utility with the possibility of building their own generation needs. Such self-generation is not without risk but, with the increasing cost of electricity from investor-owned utilities, manufacturers will take whatever steps are necessary to keep their operations open in the United States.

Q. CAN YOU PROVIDE AN EXAMPLE OF THE RISK OF A COMPANY LEAVING ITS ELECTRIC UTILITY PROVIDER IN SEARCH OF LOWER ELECTRIC COSTS?

A. Yes. Under threat of closing its operations, Alcoa compelled Santee Cooper to provide the aluminum manufacturer lower alternative rates. In Appendix B is an article from *The Post and Courier* that describes the threat that Alcoa presented to Santee Cooper regarding the loss of the aluminum smelters total load. As the article notes, with the price of natural gas at its low levels, it is imperative that heavy users of electricity, which certainly includes aluminum smelters, take whatever steps are necessary to maintain their competitiveness on a global level. The article notes that aluminum smelters have located in countries such as Iceland, Brazil, South Africa, and Saudi Arabia. If Santee Cooper were to lose the Alcoa plant in Mount Holly, South Carolina, the area would lose 600 jobs and electric rates for all other Santee Cooper consumers could increase by as much as 12%.

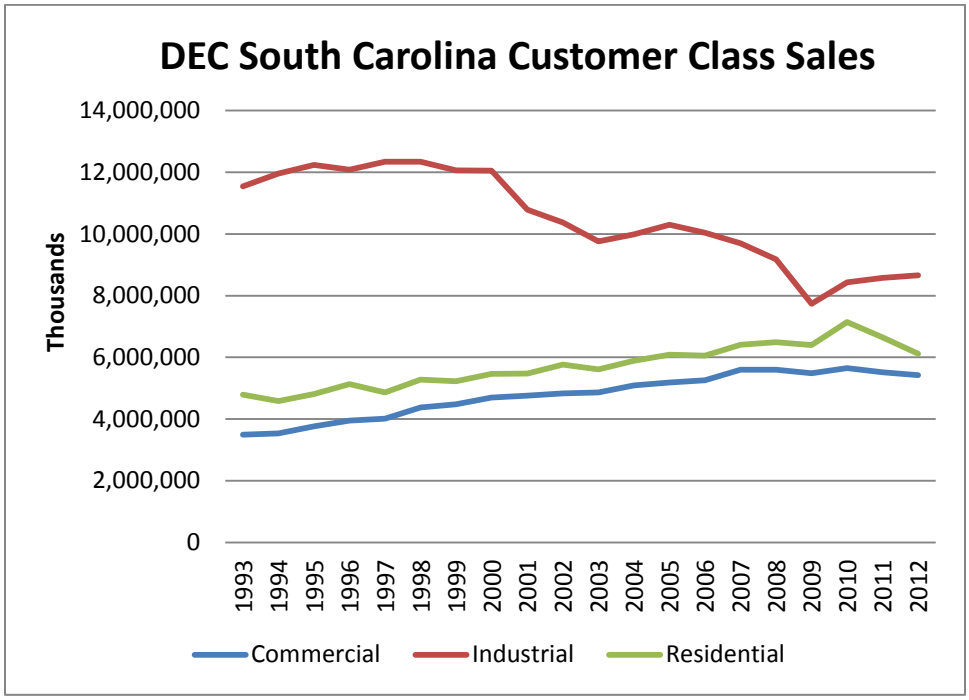
Q. MR. O'DONNELL, WHAT ARE THE DRIVERS FOR THE CURRENT DEC RATE CASE?

A. The primary driver for DEC for this rate case is the capital investment the Company has made in the following construction projects:

1. the Cliffside Steam Station Unit 6;
2. the Dan River Combined Cycle Project;
3. the McGuire Nuclear Station capacity uprates;
4. the Tornado/High Energy 1ine Break work at Oconee Nuclear Station;
5. transmission and distribution plant; and
6. general plant projects.

All of these capital investment projects are to serve DEC's increasing load commitments that stem from residential and commercial growth. Unfortunately, industrial sales are retrenching in DEC's South Carolina as evidenced by the following 20-year sales chart.

Chart 1: DEC South Carolina Sales



The good news in the above chart is that industrial sales are rebounding from their low in 2008 as the United States economy slowly begins to regain strength.

Q. DO YOU SEE ANY IMMEDIATE RISK TO DUKE ENERGY CORPORATION'S CONTINUED GROWTH IN INDUSTRIAL SALES?

A. Yes. With natural gas prices being very low, DEC must be wary that this rate case will soon price itself out of competition for large customers that have the ability to self-generate their own electricity needs.

Q. PLEASE EXPLAIN YOUR CONCERN THAT INDUSTRIAL CONSUMERS MAY LEAVE DEC FOR LESS EXPENSIVE SELF-GENERATION ELECTRICITY PRODUCTION.

A. As the Commission is aware, natural gas is at a very low level, at least in terms of the past 10-15 years, and no sizable increase is foreseen at this time for years to come. As a result, with DEC asking for yet another rate increase in South Carolina, manufacturers will examine all possible strategies to keep their plants running in the Carolinas. As the Commission might remember, several of DEC's industrial consumers in North Carolina threatened to self-generate about 20 years ago compelling that state's utilities to lower costs in special rates or risk losing those industrial consumers forever. History may very well repeat itself with DEC's increasing rates and the relatively inexpensive cost of natural gas. If DEC's industrial consumers do self-generate, residential and commercial consumers will need to pick up the cost difference through higher rates.

Q, WILL INDUSTRIAL CONSUMERS SEEK TO OBTAIN LOWER NEGOTIATED RATES FROM DEC BEFORE THEY SELF-GENERATE?

A. Not necessarily. A distinct advantage of self-generation with natural gas is the ability to lock in generation prices for extended time periods through the use of natural gas hedging. For example, if a manufacturer chooses to self-generate, it can lock in a price for its natural gas supplies for several years into the future simply by buying a strip of natural gas to meet its generation needs. Such price certainty is a huge plus for a manufacturer interested in long-term production planning from a single facility.

Most electric utilities, such as DEC, do not hedge the purchase of the commodity prices denying the utility the opportunity to know the exact

cost of production for more than a month into the future. This lack of price certainty causes production uncertainties for manufacturers.

Lastly, it is important to look at the issue of price in today's marketplace. Wholesale power prices represent a price level that manufacturers would face today if they were interested in self-generation. At the present time, wholesale power prices are generally in the range of $40 to $50 per MWH. Given that DEC's all-in cost to provide power is over $60 per MWH, clearly self-generation is a very attractive economic option for manufacturers large enough to consider self-generation.

Based on the facts as stated above, a manufacturer may not even seek to negotiate lower rates with the incumbent high-cost utility. Some manufacturers may simply build generating units and go off the grid entirely.

Q. HOW HIGH WOULD RESIDENTIAL RATES RISE IF DEC WERE TO LOSE MORE INDUSTRIAL SALES?

A. If industrial sales are eliminated in the DEC service territory, rates for the commercial and residential consumers will rise even further than is requested by DEC in this case. Beyond the rate increases, the Commission should consider the ill-effects that will occur throughout this state if we continue to shed good-paying manufacturing jobs. The economic ripple resulting from a plant closing cannot be under-stated and is permanent. Families that once depended on manufacturing employment are looking for work in fields that, most likely, do not pay as much as lost manufacturing jobs. According to a 2009 study by Miley, Gallo & Associates, the average wage in manufacturing was $46,192, which was 27% higher than the statewide average. Furthermore, the South Carolina manufacturing sector paid more than 20% of all wages in the state. Put

simply, manufacturers are huge economic engines that help sustain and grow geographic areas.

Q. CAN YOU QUANTIFY THE IMPACT THAT MANUFACTURING HAS ON THE SOUTH CAROLINA ECONOMY?

A. On June 13, 2013, the South Carolina Department of Commerce issued a news release in which Bobby Hitt, the state's Secretary of Commerce, discussed the growth of manufacturing in the state and the contribution of manufacturing to the state's gross state product. According to the South Carolina Department of Commerce, the state's manufacturing gross domestic product grew 8.5% in 2011 compared to the 7.8% U. S. rate.

This growth in the state's manufacturing sector indicates that manufacturers are growing their businesses and providing jobs to South Carolinians who have struggled and continue to struggle through tough economic times. We should continue to nurture this sector of the state's economy so it can grow further and put more South Carolinians back to work. Further electric price increases do not promote economic development and job attraction and retention.

II. ECONOMIC AND REGULATORY POLICY GUIDELINES FOR A FAIR RATE OF RETURN

Q. PLEASE BRIEFLY DESCRIBE THE ECONOMIC AND REGULATORY POLICY CONSIDERATIONS YOU HAVE TAKEN INTO ACCOUNT IN DEVELOPING YOUR RECOMMENDATION CONCERNING THE FAIR RATE OF RETURN THAT DEC SHOULD BE ALLOWED THE OPPORTUNITY TO EARN.

A. The theory of utility regulation assumes that public utilities are natural monopolies. Historically, it was believed or assumed that it was more efficient for a single firm to provide a particular utility service than multiple firms. Even though deregulation for the procurement of natural gas and generation of electric power and energy is spreading, the delivery of these products to end-use customers will continue to be considered a natural monopoly for the foreseeable future. When it is deemed that a perceived natural monopoly does in fact exist, regulatory authorities regulate the service areas in which regulated utilities provide service, e.g. by assigning exclusive franchised territories to public utilities or by determining territorial boundaries where disputes arise in order for these utilities to provide services more efficiently and at the lowest possible cost. In exchange for the protection of its monopoly service area, the utility is obligated to provide adequate service at a fair, regulated price.

This naturally raises the question - what constitutes a fair price? The generally accepted answer is that a prudently managed utility should be allowed to charge prices that allow the utility the opportunity to recover the reasonable and prudent costs of providing utility service and the

opportunity to earn a fair rate of return on invested capital. This fair rate of return on capital should allow the utility, under prudent management, to provide adequate service and attract capital to meet future expansion needs in its service area. Obviously, since public utilities are capital-intensive businesses, the cost of capital is a crucial issue for utility companies, their customers, and regulators. If the allowed rate of return is set too high, then consumers are burdened with excessive costs, current investors receive a windfall, and the utility has an incentive to overinvest. If the return is set too low, adequate service is jeopardized because the utility will not be able to raise new capital on reasonable terms.

Since every equity investor faces a risk-return tradeoff, the issue of risk is an important element in determining the fair rate of return for a utility.

Regulatory law and policy recognize that utilities compete with other firms in the market for investor capital. In the case of Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591 (1944), the U.S. Supreme Court recognized that utilities compete with other firms in the market for investor capital. Historically, this case has provided legal and policy guidance concerning the return which public utilities should be allowed to earn:

In that case, the U.S. Supreme Court specifically stated that:

> "...the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise so as to maintain credit and attract capital." (320 U.S. at 603)

III. COST OF COMMON EQUITY

Q. PLEASE EXPLAIN HOW THE ISSUE OF DETERMINING AN APPROPRIATE RETURN ON A UTILITY'S COMMON EQUITY INVESTMENT FITS INTO A REGULATORY AUTHORITY'S DETERMINATION OF FAIR, JUST, AND REASONABLE RATES FOR THE UTILITY.

A. In South Carolina and in all regulatory jurisdictions, a utility's rates must be fair, just, and reasonable. Regulation recognizes that utilities are entitled to an opportunity to recover the reasonable and prudent costs of providing service, and the opportunity to earn a fair rate of return on the capital invested in the utility's facilities, such as power plants, transmission lines, distribution lines, buildings, vehicles, and similar long-lived capital assets. Utilities obtain capital funding through a combination of borrowing (debt financing) and issuing stock (equity financing). The allowed return on equity (ROE) is the amount that is determined to be appropriate for the utility's common stockholders to earn on the capital that they contribute to the utility when they buy its stock. If the regulatory authority sets the ROE too low, the stockholders will not have the opportunity to earn a fair return; if the regulatory authority sets the ROE too high, the customers will pay too much, and the resulting rates will be unfair and unreasonable.

Q. HOW DO REGULATORY AUTHORITIES GO ABOUT DETERMINING WHAT IS A FAIR RATE OF RETURN ON EQUITY?

A. Regulatory commissions and boards, as well as financial industry analysts, institutional investors, and individual investors, use different analytical models and methodologies to estimate/calculate reasonable rates of return on equity. Among the measures used are "Discounted Cash Flow" or

"DCF" analysis and "Comparable Earnings Analysis." Sometimes a technique called the "Capital Asset Pricing Model" or "CAPM" method is used but, as I will discuss later in this testimony, I do not believe the CAPM produces realistic results in modern markets. I believe that the two most useful methodologies are DCF Analysis and the Comparable Earnings Analysis.

A. Discounted Cash Flow (DCF) Analysis

Q. CAN YOU PLEASE EXPLAIN THE DISCOUNTED CASH FLOW METHOD?

A. Yes. The DCF method is a widely used method for estimating an investor's required return on a firm's common equity. In my twenty-eight years of experience with the Public Staff of the North Carolina Utilities Commission and as a consultant, I have seen the DCF method used much more often than any other method for estimating the appropriate return on common equity. Consumer advocate witnesses, utility witnesses and other intervenor witnesses have used the DCF method, either by itself or in conjunction with other methods such as the Comparable Earnings Method or the Capital Asset Pricing Model, in their analyses.

The DCF method is based on the concept that the price which the investor is willing to pay for a stock is the discounted present value or present worth of what the investor expects to receive as a result of purchasing that stock. This return to the investor is in the form of future dividends and price appreciation. However, price appreciation can be ignored since appreciation in price is only realized when the investor sells the stock. Therefore, the only income that the investor will receive from the company in which it invests is the dividend stream. Mathematically, the relationship is:

Let D = dividends per share in the initial future period
g = expected growth rate in dividends
k = cost of equity capital
P = price of asset (or present value of a future stream of dividends)

$$\text{then } P = \frac{D}{(1+k)} + \frac{D(1+g)}{(1+k)^2} + \frac{D(1+g)}{(1+k)^3} + \ldots\ldots + \frac{D(1+g)}{(1+k)^t}$$

This equation represents the amount (P) an investor will be willing to pay for a share of common equity with a given dividend stream over (t) periods.

Reducing the formula to an infinite geometric series, we have:

$$P = \frac{D}{k-g}$$

Solving for k yields:

$$k = \frac{D}{P} + g$$

Q. MR. O'DONNELL, DO INVESTORS IN UTILITY COMMON STOCKS REALLY USE THE DCF MODEL IN MAKING INVESTMENT DECISIONS?

A. Absolutely. Utility investors tend to be individuals or institutions interested in current income. Given the current historically low environment for fixed income securities, many investors are looking at utility stocks as somewhat "bond equivalents" right now in that utility stocks provide excellent income sources during a time of low interest rates. In today's investment environment, the average stock investor will calculate the amount of funds he/she will receive relative to the initial investment, which is defined as the current dividend yield and the amount of funds that the investor can expect in the future from the growth in the

dividend. The combination of the current dividend yield and the future growth in dividends is central to the basic tenet of the DCF model.

Q. HAVE YOU USED THE DCF MODEL IN ANALYZING COMMON STOCKS FOR INVESTMENT PURPOSES?

A. Yes. I have used and continue to use the DCF method extensively in analyzing common stocks for potential personal purchases as well as for purchases contemplated for money management clients that I have served.

Although the DCF formula stated above may appear complicated, the DCF method is intuitively a very simple model to understand. To determine the total rate of return one expects from investing in a particular equity security, the investor adds the dividend yield which he or she expects to receive in the future to the expected growth in dividends over time. If the regulatory authority sets the rate at a fair level, the utility will be able to attract capital at a reasonable cost, without forcing the utility's customers to pay more than necessary to attract needed capital.

Unlike models such as the CAPM that are more theoretical and academic in nature, the DCF is grounded in solid practicality that is used by money managers and individual investors throughout the world on a daily basis.

Q. CAN YOU GIVE AN EXAMPLE?

A. Yes. If investors expect a current dividend yield of 5%, and also expect that dividends will grow at 4%, then the DCF model indicates that investors would buy the utility's common stock if it provided a return on equity of 9%.

Q. HAVE YOU PREPARED ANY ANALYSES USING THE DCF METHOD TO EVALUATE A FAIR RATE OF RETURN FOR DEC?

A. Yes, I have. First, I identified a group of 33 comparable companies and evaluated their current and projected dividend yields and growth.

I developed this group of comparable companies to ensure that the return on equity for DEC developed in this analysis is consistent with the returns which can be obtained from similar equity investments in the open market.

I was not able to perform a DCF analysis directly on DEC since it is a subsidiary of Duke Energy Corporation. However, since Duke Energy Corporation is publicly traded, I was able to perform a rate of return analysis on the parent company.

Q. PLEASE EXPLAIN HOW YOU SELECTED THESE 33 COMPANIES FOR YOUR COMPARABLE GROUP.

A. All of the companies in my comparable group are listed in The Value Line Investment Survey "Electric Utility Industry" group.

Further, I screened my comparable group of companies to include only those companies in the comparable group that have an S&P Quality Rating of a B, which is the quality rating for Duke Energy Corporation, a B+, the next highest quality rating, or a B-, which is the next lowest quality rating from the Duke Energy Corporation rating of B. This quality rating is an appropriate screening method because the S&P Quality Rating measures stability of earnings and dividends and most utility investors seek income and are relatively risk-averse.

I also chose to exclude companies that either paid no dividend, or had recently cut or reinstated their dividends, or were the subject of take-over or merger discussions. Since Duke Energy Corporation's dividend is secure and, to my knowledge, Duke Energy Corporation is not currently involved in any further merger or take-over discussions, I omitted companies that met the above criteria.

Q. WHAT DIVIDEND YIELD DO YOU THINK IS APPROPRIATE FOR USE IN THE DCF MODEL?

A. I have calculated the appropriate dividend yield by averaging the dividend yield expected over the next 12 months for each comparable company, as reported by the Value Line Investment Survey. The period covered is from April 5, 2013 through June 28, 2013. To study the short-term as well as long-term movements in dividend yields, I examined the 13-week, 4-week, and 1-week dividend yields for the comparable group. My results appear in Exhibit No. KWO-1 and show a dividend yield range of 3.9% to 4.0% for the comparable group and 4.4% to 4.6% for Duke Energy Corporation during the three time periods that I examined.

Q PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELD RANGES DISCUSSED ABOVE.

A. I developed the dividend yield range for the comparable group by averaging each Company's dividend yield over the above-stated 13-week and 4-week periods as well as examining the most recent dividend yield reported by Value Line for each company.

Q. HOW DID YOU DERIVE THE EXPECTED GROWTH RATE?

A. I used several methods in determining the growth in dividends that investors expect. The first method I used was an analysis commonly referred to as the "plowback ratio" method. If a company is earning a rate

of return (r) on its common equity, and it retains a percentage of these earnings (b), then each year the earnings per share (EPS) are expected to increase by the product (br) of its earnings per share in the previous year. Therefore, br is a good measure of growth in dividends per share. For example, if a company earns 10% on its equity and retains 50% (the other 50% being paid out in dividends), then the expected growth rate in earnings and dividends is 5% (50% of 10%). To calculate a plowback for the comparable group, I used the following formula:

$$g = \frac{br(2012) + br(2013E) + br(2014E) + br(\text{'2016E-'2018E Avg})}{4}$$

The plowback estimates for all companies in the comparable group can be obtained from The Value Line Investment Survey under the title "percent retained to common equity." Exhibit No. KWO-2 lists the plowback ratios for each company in the comparable group. This exhibit contains one reference to "NMF" which is the abbreviation for "no meaningful figure". When "NMF" appears, a company's earnings were less than the dividend paid out, which means that the company did not reinvest or "plowback" any earnings from that year's operations. For purposes of being conservative, I treated the "NMF" entries as a 0 for purposes of my analysis. The plowback method is a very useful tool for comparing the comparable group's growth rates on a recent historical basis as well as a short-term forecasted basis.

A key component in the DCF Method is the expected growth in dividends. In analyzing the proper dividend growth rate to use in the DCF Method, the analyst must consider how dividends are created. Since dividends cannot be paid out without the company first earning the funds paid out, earnings growth is a key element in analyzing the expected growth in

dividends. Similarly, what remains in a company after it pays its dividend is reinvested, or "plowed back", into the company in order to generate future growth. As a result, book value growth is another element that, in my opinion, must be considered in analyzing a company's expected dividend growth. To analyze the expected growth in dividends, I believe the analyst should first examine the historical record of past earnings, dividends, and book value. Hence, the second method I used to estimate the expected growth rate was to analyze the historical 10-year and 5-year historical compound annual rates of change for earnings per share (EPS), dividends per share (DPS), and book value per share (BPS) as reported by Value Line.

Value Line is the most recognized investment publication in the industry and, as such, is used by professional money managers, financial analysts, and individual investors worldwide. A prudent investor examines all aspects of a Company's performance when making a capital investment decision. As such, it is only practical to examine historical growth rates for the company for which the analysis is being performed. The historical growth rates for the comparable group can be seen in O'Donnell Exhibit No. KWO-1. Some analysts, such as Mr. Hevert, will not present historical growth rates in their DCF analyses. I believe analysts that do not present all such available data fail to completely inform the respective regulatory bodies of the full extent of information on which investors base their expectations. If the analyst does not present historical information, he/she should, at a minimum, inform the respective regulatory body of the reason that such information is not being considered in the analysis.

The third method I used was the Value Line forecasted compound annual rates of change for earnings per share, dividends per share, and book value per share.

The fourth method I used was the forecasted rate of change for earnings per share that analysts supplied to Charles Schwab & Co. This forecasted rate of change is not a forecast supplied by Charles Schwab & Co. but is, instead, a compilation of forecasts by industry analysts.

The details of my DCF results can be seen in Exhibit No. KWO-1.

It is important to understand the reasons why the various data results appear from Exhibit KWO-1. In the early 1990s, most baseload plant construction had ended and utilities were flush with cash thereby creating solid earnings growth. Earnings growth fell off in the early 2000s but has increased in the past five years as utilities, in general, have been building generation and filing more frequent rate cases.

The explanation above of utility growth patterns over recent history is necessary in order to understand current and past market conditions so the analyst can use his/her best judgment in determining the market expected dividend growth rate in the future.

Q. WHAT IS THE INVESTOR RETURN REQUIREMENT FROM THE DCF ANALYSIS?

A. As can be seen on Exhibit KWO-1, the dividend yield for the three time-frames studied ranges from 3.9% to 4.0% for the comparable group and 4.4% to 4.6% for Duke Energy Corporation.

In terms of the proper dividend growth rate to employ in this analysis, I believe that it is appropriate to examine the recent history of earnings and dividend growth to assess and provide the best estimate of the dividend growth that investors expect in the future. An examination of the 10-year

and 5-year historical growth rates for the comparable group show a wide range of historical growth rates, particularly for the past 5-year period. Similarly, a review of the forecasted growth rates shows a similar wide range. The resulting average Value Line earnings growth rate of 5.0% is clearly moved significantly upward due to the incredibly high forecasted growth in earnings of Otter Tail Power. If this one utility was taken out of the comparable group and the figures re-calculated, the forecasted earnings growth rate would fall from 5.0% to 4.5%. However, an analyst that is true to his/her word will not pick and choose companies and growth rates to support a pre-conceived return on equity. Instead, an ethical analyst will use all available data and then explain the reasons why he/she chose to include or exclude certain data.

The fact that the comparable group forecasted growth rates are all between roughly 4% to 5% indicates that the electric utility industry is moving back to the days of slow but steady growth in earnings, dividends, and book value.

As I have stated in several previous testimonies, due to the effects of fundamental changes that have occurred in the utility industry over the past ten years, I believe that it is proper to place more weight on forecasted figures than historical figures in estimating the cost of equity for the comparable group as well as for Duke Energy Corporation. As a result, I believe that the proper growth rate range for the comparable group of companies to use in the DCF analysis is 4.5% to 5.0%. This growth rate range recognizes that most electric utilities will be undergoing plant expansions in the near term and simply cannot be expected to grow their dividends at the same pace of earnings growth. Thus, the 4.5% to 5.0% growth rate range is at the top end of the comparable group's Value Line forecasted earnings growth rate but is also above the comparable group's

Value Line forecasted dividend and book value growth rates. This range also incorporates the average Schwab forecasted EPS growth rate for the comparable group.

Combining the comparable group's dividend yield of 3.9% to 4.0% with the growth rate range of 4.5% to 5.0% produces a DCF range of 8.4% to 9.0%.

For Duke Energy Corporation, I believe the proper growth rate range is in the range of 3.5% to 4.0%. The lower end of the range reflects the significantly slower rate of growth of Duke Energy Corporation forecasted by Value Line in dividends and book value and is consistent with the Schwab forecasted earnings. The upper limit of 4.0% is equivalent to the forecasted earnings growth rate of Value Line and is indicative of Duke Energy Corporation's efforts to complete generation projects and recover the costs of those projects through an increase in base rates.

Combining Duke Energy Corporation's dividend yield range of 4.4% to 4.6% with the growth rate range of 3.5% to 4.0% produces a DCF range of 7.9% to 8.6%.

The above-stated comparable group cost of equity range represents only one analysis I used in the examination of the proper cost of equity to apply in the current rate case.

Duke Energy Corporation is at the tail end of a construction cycle. Its payout ratio, which is a measure of the dividend payout relative to earnings needed to pay the dividend, is high thereby indicating that future dividend increases will be less than earnings growth. Since the DCF formula is predicated on future dividend growth, it would be, as stated

above, inaccurate to use only earnings growth rates in the DCF. Doing so produces unrealistically high return on equity numbers that cannot be sustained in real life. To mitigate this problem, I have presented EPS, DPS, and BPS figures to the Commission and systematically explained my rationale for arriving at the above-stated growth rates. I believe it is incumbent upon every analyst presenting testimony in this case to present such a robust analysis to the Commission.

B. Comparable Earnings Analysis

Q. MR. O'DONNELL, WOULD YOU PLEASE EXPLAIN WHY YOU PERFORMED A COMPARABLE EARNINGS ANALYSIS IN ADDITION TO YOUR DCF ANALYSIS?

A. Yes. The comparable earnings method provides investors with actual historical earned returns on common equity. Investors use this information as a guide to assess an investment's current required rate of return. I used the comparable earnings method in my analysis in this case to assess the reasonableness of my DCF results and to provide an independent methodological estimate of the return that investors would consider reasonable for DEC.

Q. WOULD YOU PLEASE EXPLAIN HOW YOU PERFORMED THE COMPARABLE EARNINGS ANALYSIS?

A. Exhibit No. KWO-3 presents a list of the earned returns on equity of the comparable group over the period of 2012 through 2018. I picked this range to provide the Commission with two years of historical returns as well as four years of forecasted returns. As can be seen in this exhibit, the comparable companies' earned returns on equity were stronger than the earned returns of Duke Energy Corporation. In 2012, the average earned

return of the comparable group was 9.9% as compared to only 5.2% for Duke Energy Corporation. The forecasted return on equity for the comparable companies is expected to stay in roughly the same range as in 2012; the expected return on equity in 2013 is 9.7%, but is expected to rise to 10.2% in the 2016-2018 timeframe. Duke Energy Corporation, on the other hand, is expected to have earned returns well below that of the comparable group in 2012 with a return of only 5.2% and increasing only slightly to 8.0% in the 2016-2018 timeframe. Clearly, the market anticipates that Duke Energy Corporation will under-achieve relative to its peer group of companies.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM THE COMPARABLE EARNINGS ANALYSIS?

A. First, the financial performance of Duke Energy Corporation is well behind the performance of the companies in the comparable group. The market recognizes the sub-par performance of Duke Energy Corporation and has priced its stock down to a level where its dividend yield is approximately 60 basis points higher than the dividend yield of the comparable group. Based on the above-stated findings, I believe the proper rate of return using a comparable earnings analysis is in the range of 8.5% to 9.5%. The 8.5% lower end of the range recognizes the relatively poor performance of Duke Energy Corporation and its correspondingly higher dividend yield. The 9.5% upper end of the range recognizes the better performance of the comparable group and is approximately equal to the earned return on equity of the comparable group for 2010 and 2011 and only slightly lower than the forecasted earned return on equity for the comparable group for the forecasted period of 2016 through 2018.

C. Return on Equity Recommendation

Q. WHAT IS YOUR RECOMMENDATION FOR THE RETURN ON EQUITY AND OVERALL RATE OF RETURN THE COMMISSION SHOULD USE IN THIS PROCEEDING?

A. As I mentioned earlier, the results from my DCF analysis resulted in an investor return requirement range of 8.4% to 9.0% for the comparable group and 7.9% to 8.6% for Duke Energy Corporation.

The comparable earnings method produces a return on equity in the range of 8.5% to 9.5%. My specific recommendation in this case is for the Commission to grant Duke Energy Corporation a return on equity of 9.0%. This 9.0% ROE is at the high end of the range of the DCF results but is in the middle of the results for the comparable earnings analysis.

In making this recommendation, I am herein recognizing the strength of the stock market over the past year and am actually recommending a ROE slightly higher than my DCF results. As the Commission is aware, interest rates remain at historic lows. Individuals seeking an income stream see utility dividends as good alternatives at the present time with the lack of adequate fixed income (bond) opportunities. As a result, utility stock prices have soared in the past two years. For example, at the beginning of 2011, the Dow Jones Utility Index stood at 404.99. On June 28, 2013, the Dow Jones Utility Index had risen to 485.9 thereby representing an increase in utility stock prices of almost 20%. When stock prices increase, dividend yields decrease. Hence, over the past two years, the increase in utility stock prices has driven dividend yields of utility stocks downward. While the Company and its witness, Mr. Hevert, would like the

Commission to ignore the current low cost of capital environment, the Commission simply cannot do so. If DEC's rates are set too high in the proceeding, the economy in the Company's service territory will suffer and, in the long-term, so will DEC's earnings.

Q. HOW DOES YOUR RECOMMENDED ROE OF 9.0% COMPARE TO WHAT ANALYSTS ARE EXDECTING FOR OVERALL MARKET RETURNS?

A. If anything, my recommended ROE of 9.0% is well-above what market experts are forecasting for future market returns. In Appendix C, I have attached an article entitled "Kiss 10% Market Returns Goodbye" that was published by Market Watch of the Wall Street Journal on Nov. 4, 2012. I strongly urge the Commission to read this article closely. In particular, it is critical, in my opinion, for the Commission to note the comment by Roger Ibbotson found on the first page of the article that reads as follows:

> "Starting in 1926, the return on the large cap market has been 9.8%, but this was during a period when inflation rates are higher than they are today, and risk-less rates were higher than they are today." Said Ibbotson, a Yale professor who also currently serves as chairman and chief investment officer at Zebra Capital Management. "You have to knock it all down a couple of percent, because we really are in a risk-less rate environment where the rates are close to zero."
>
> For the next quarter century or more, Ibbotson said he would "not predict more than an 8% return on the market but that's not bad. That's a great return."

The Commission may remember that Dr. Ibbotson was the Duke Energy rate of return witness in the Company's 1991 North Carolina general rate case, which was Docket No. E-7, Sub 487. Unfortunately, DEC's rate of return witness in this case apparently disagrees with Duke Energy's

former rate of return witness as Mr. Hevert has used a market rate of return well in excess of 10% in this case.

This Market Watch article also cites legendary investor Jack Bogle, the founder of the Vanguard Group. As can be seen in the article, Mr. Bogle expects market returns to be in the range of 6% to 8%.

My recommended ROE of 9.0% is higher than both Dr. Ibbotson and Mr. Bogle are forecasting for future overall market returns, but it is much closer to the overall market forecasted returns than Mr. Hevert's recommendation of 11.25%.

Q. HAS THIS COMMISSION ISSUED AN ORDER WITH A RETURN ON EQUITY FOR AN ELECTRIC UTILITY IN THE RECENT PAST?

A. Yes. On Dec. 19, 2012, the South Carolina Public Service Commission issued an order allowing South Carolina Electric & Gas (SCE&G) to earn a 10.2% return on equity.

Q. HOW HAVE THE EQUITY MARKETS CHANGED FROM DECEMBER, 2012 TO THE PRESENT?

A. On Dec. 29, 2012, the Dow Jones Utility Average stood at 458.14. On June 28, 2013, the Dow Jones Utility Average closed at 485.9, which represents an increase of 6.0% in just 6 months. In addition, at the time of the SCE&G ruling by this Commission, Duke Energy Corporation's stock was selling for approximately $65 per share as compared to Duke Energy Corporation's current price of $67.5 per share, which represents slightly less than a 3.8% price appreciation in half a year. This increase in price has driven Duke Energy Corporation's dividend yield from 4.8% at the time of the SCE&G order to its current yield of 4.6%. This decrease in the

reported dividend yield, alone, would require the 10.2% allowed ROE be re-set at 9.7%.

Q. WHAT IS THE AVERAGE ROE ALLOWED BY STATE REGULATORS IN 2013?

A. According to information obtained from SNL Financial, which is a financial information firm that provides in-depth financial news and data for the energy industry and others, the average return on equity granted by state regulators for rate cases in 2013 to date is 9.77%. It should be noted that I excluded allowed ROEs for Virginia given that these cases were not rate cases and the allowed ROEs were set legislatively and were applicable only as rate riders. The 2013 authorized ROEs set throughout the country can be seen in Exhibit KWO-4

D. Capital Structure

Q. MR. O'DONNELL, HAVE YOU REVIEWED THE CAPITAL STRUCTURE REQUESTED BY THE COMPANY IN THIS PROCEEDING?

A. Yes, I have.

Q. MR. O'DONNELL, WHAT CAPITAL STRUCTURE IS DEC SEEKING IN THIS CASE?

A. According to the Company's application, DDEC is seeking approval of the following capital structure in this case:

Table 1: DEC Requested Capital Structure

Component	Capital Structure Ratio (%)	Cost Rate (%)	Wgtd. Cost Rate (%)
Long-term Debt	47.00%	5.29%	2.49%
Common Equity	53.00%	11.25%	5.96%
Total Capitalization	100.00%		8.45%

Q. WHAT IS A CAPITAL STRUCTURE AND HOW WILL IT IMPACT THE REVENUES THAT DDEC OR ANY OTHER UTILITY IS SEEKING IN A RATE CASE?

A. The term "capital structure" refers to the relative percentage of debt, equity, and other financial components that are used to finance a company's investments.

For simplicity purposes, there are basically three financing methods. The first method is to finance an investment with common equity, which essentially represents ownership in a company and its investments. Common equity returns, which take the form of dividends to stockholders, are not tax deductible which, on a pre-tax basis alone, makes this form of financing about 40% more expensive than debt financing. The second form of corporate financing is preferred stock, which is normally used to a much smaller degree in capital structures. Dividend payments associated with preferred stock are not tax deductible. Corporate debt is the other major form of financing used in the corporate world. There are two basic types of corporate debt: long-term and short-term. Long-term debt is generally understood to be debt that matures in a period of more than one year. Short-term debt is debt that matures in less than one-year. Both long-term debt and short-term debt represents liabilities on the company's

books that must be repaid prior to any common stockholders or preferred stockholders receiving a return on their investment.

Q. HOW IS A UTILITY'S TOTAL RETURN CALCULATED?

A. A utility's total return is developed by multiplying the component percentages of its capital structure represented by the percentage ratios of the various forms of capital financing relative to the total financing on the company's books by the cost rates associated with each form of capital and then totaling the results over all of the capital components. When these percentage ratios are applied to various cost rates, a total after-tax rate of return is developed. Since the utility must pay dividends associated with common equity and preferred stock with after-tax funds, the post-tax returns are then converted to pre-tax returns by grossing up the common equity and preferred stock returns for taxes. The final pre-tax return is then multiplied by the Company's rate base in order to develop the amount of money that customers must pay to the utility for its return on investment and tax payments associated with that investment.

Q. HOW DOES CAPITAL STRUCTURE IMPACT THIS CALCULATION?

A. From the above discussion, it is clear to see that costs to consumers are greater when the utility finances a higher proportion of its rate base investment with common equity and preferred stock versus long-term debt. However, long-term debt, which is first in line for repayment, is more risky to the utility than is common equity due to the fact that debt is a contractual obligation as opposed to common equity where no similar obligations exist.

Q. WHY SHOULD THE SOUTH CAROLINA PUBLIC SERVICE COMMISSION BE CONCERNED ABOUT HOW DEC FINANCES ITS RATE BASE INVESTMENT?

A. There are two reasons that the Commission should be concerned about how DEC finances its rate base investment. The first reason is that the cost of common equity is higher than the cost of long-term debt, so that a higher equity percentage will translate into higher costs to DEC's customers with no corresponding improvement in quality of service. Long-term debt is a financial promise made by the company and is carried as a liability on the company's books. Common stock is ownership in the company. Due to the nature of this investment, common stockholders require higher rates of return to compensate them for the extra risk involved in owning part of the company versus having a promissory note from the company.

The second reason the Commission should be concerned about DEC's capital structure is due to the tax treatment of debt versus common equity. Public corporations, such as Duke Energy Corporation, can write-off interest payments associated with debt financing. Corporations are not, however, allowed to deduct common stock dividend payments for tax purposes. All dividend payments must be made with after-tax funds, which are more expensive than pre-tax funds. Since the regulatory process allows utilities to recover all expenses, including taxes, rates must be set so that the utility pays all its taxes and has enough left over to pay its common stock dividend. If a utility is allowed to use a capital structure for ratemaking purposes that is top-heavy in common stock, customers will be forced to pay the associated income tax burden, resulting in unjust, unreasonable, and unnecessarily high rates while giving no added value to the customer. Setting rates through the use of capital structure that is top-heavy in common equity violates the fundamental principles of utility

regulation that rates must be fair but only high enough to support the utility's provision of safe, adequate, and reliable service at a fair price.

Q. DO YOU BELIEVE THAT THE CAPITAL STRUCTURE BEING PROPOSED BY DEC IN THIS CASE IS APPROPRIATE FOR RATEMAKING PURPOSES?

A. Yes. As I have stated in previous testimonies, the credit rating of a utility subsidiary is inextricably linked to the credit rating of its parent holding company. As evidence, Standard and Poors (S&P), which is the pre-eminent credit rating agency in the world, made the following statement in 2010 in regard to the credit ratings of a utility subsidiary and its parent company:

> Utility subsidiaries' ratings are linked to the consolidated group's credit quality because of the financial linkage of the parent to the subsidiary and the likelihood that, in times of stress or bankruptcy, the parent will consider the utility subsidiary as a resource to be used. Accordingly, our base-case financial analysis primarily focuses on the performance, cash flow, and balance sheet of the consolidated group.
>
> Source: Methodology: Differentiating The Issuer Credit Ratings Of A Regulated Utility Subsidiary And Its Parent, **Standard & Poors**, March 11, 2010

The capital structure of Duke Energy Corporation was, according to Value Line, 52.9% common equity at year-end in 2012 and 47.1% long-term debt. Since the equity ratio of the consolidate company was sufficiently close to the requested capital structure of DEC in this proceeding, I will accept the Company's proposed capital structure in this case. However, I urge the Commission to pay particular attention to the issue of capital structure in future proceedings. If Duke Energy Corporation's foray into

more risky ventures than the provision of regulated electric service in the Carolinas drives up the Company's cost of capital, I urge the Commission to take steps to financially segregate the lower risk/lower return utility from its non-regulated sister organizations.

Q. MR. O'DONNELL, WHAT IS YOUR RECOMMENDED OVERALL RATE OF RETURN FOR THIS PROCEEDING?

A. In the table below is my recommended capital structure, return on equity, and the resulting overall rate of return I am recommending for use in this proceeding.

Table 2: SCEUC Recommended Overall Rate of Return

Component	Capital Structure Ratio (%)	Cost Rate (%)	Wgtd. Cost Rate (%)
Long-term Debt	47.00%	5.29%	2.49%
Common Equity	53.00%	9.00%	4.77%
Total Capitalization	100.00%		7.26%

As can be seen in this table, my overall recommended rate of return in this case is 7.26%.

E. Review of Company Witness Hevert's Testimony

Q. WHAT METHODS DID MR. HEVERT USE IN HIS ANALYSIS OF THE COST OF EQUITY IN THIS PROCEEDING?

A. Mr. Hevert used the DCF model and the Capital Asset Pricing Model (CAPM), which is essentially a risk premium model, in this case.

Q. WHAT ARE THE PRIMARY DIFFERENCES BETWEEN YOUR APPLICATION OF THE DCF MODEL AND MR. HEVERT'S APPLICATION OF THE DCF?

A. One difference between Mr. Hevert and me is that Mr. Hevert uses forecasted earnings growth estimates as the primary source of dividend growth in the DCF model whereas I use a more global approach that examines historical and forecasted growth in earnings, dividends, and book value. In my opinion, it is in the best interest of the Commission to have all relevant data presented to it and then for the analyst making the recommendation to fully explain why he/she presented the data. Mr. Hevert chooses not to present such data to the Commission. Investors use dividend, earnings, and book value information in determining the price at which they are willing to pay for the stock and, hence, the underlying investor return requirement using the DCF model. I believe the Commission should be presented this same information so it can make an informed decision.

Q. MR. O'DONNELL, WHY DO YOU NOT USE THE CAPM IN DETERMINING RETURNS ON EQUITY IN UTILITY REGULATORY PROCEEDINGS?

A. I have been presenting rate of return testimony to state regulators throughout the country for almost 30 years. Outside of utility regulatory

proceedings, I simply do not see the CAPM used in realistic practical settings. In essence, the CAPM is a theoretical model that satisfies the academician in financial professionals but, in reality, it simply cannot be explained or used in real life settings.

Q. CAN YOU PROVIDE AN EXAMPLE OF HOW FINANCIAL ANALYSTS SUCH AS YOURSELF HAVE DIFFICULTY WITH THE USE OF THE CAPM IN REAL LIFE SITUATIONS?

A. Yes. Financial analysts, such as myself and Mr. Hevert, often have to go before investment committees or even large individual investors and explain exactly why we recommend one security over another. Explaining a rate of return based on the CAPM would involve explaining financial terms such as beta and risk premiums. Since the beta of the Company in question would be shared by many other companies, the calculated rate of return using the CAPM is utterly generic. An investor that wanted to invest in Duke Energy Corporation, for example, would have to settle with the concept that the rate of return he/she demands for holding Duke Energy Corporation would be identical to any other Company that shares the same beta with Duke Energy Corporation. Furthermore, acceptance of the rate of return derived from the CAPM assumes that calculated risk premiums stay relatively constant over time. Such an assumption is just unrealistic, particularly in modern times when the Federal Reserve is keeping interest rates at historically low levels.

Q. **PLEASE EXPLAIN YOUR CONCERN REGARDING THE RISK PREMIUM EMPLOYED IN THE CAPM.**

A. Current economic conditions are vastly different from conditions that existed in the marketplace since 1926. For example, from the end of WWII until the mid-1990s, the United States economy was generally seen as the dominant market in the world. Today, however, China and India are

both making strong economic strides that are threatening our dominance in world markets.

In 2004, Dr. Jeremy J. Siegel from the University of Pennsylvania published a paper for the Chartered Financial Analysts Institute Conference Proceedings entitled "The Long-Run Equity Risk Premium." In this study, Dr. Siegel examined stock and bond market returns from 1802 through 2003. Over this extended period of time, the real return on common stocks was 6.8% whereas the real return on long-term government bonds was 3.5% thereby producing a risk-premium of 3.3%. The summary of the article states:

> This is a lower return world because the P/E for equities is justifiably higher than it has been historically, which implies lower long-term real equity returns. Siegel's constant of a 6.5-7 percent equity return probably will not hold for all future periods. Investors probably will receive closer to 5 percent. Nevertheless, the real equity risk premium will still be roughly 3 percent. Investors will certainly seek other higher yielding real assets, but of the three major asset classes – stocks, bonds, and real estate – all are probably going to realize lower returns than their historical averages. Consequently, equities still offer an attractive premium for long-term investors.

Also in 2004, Mr. Robert D. Arnott, editor of the Financial Analysts Journal, wrote an article entitled "The Meaning of a Slender Risk Premium." Mr. Arnott concluded his piece by stating that:

> The risk premium rules of thumb we've relied on are shaky. Indeed, the risk premium is a skinny hook to hang our future prosperity on. Should we rely on the risk premium for profit, or should we look more aggressively for other paths to profit? I think the latter is by far the more sensible route.

Q. DO YOU HAVE ANY OTHER CONCERNS ABOUT THE USE OF THE CAPM TO CALCULATE THE REQUIRED RETURN ON EQUITY FOR A COMPANY?

A. Yes. My experience has shown to me that the CAPM is simply not able to reflect sudden events, be those events good news for the Company or bad, in the calculated return on equity.

Q. PLEASE EXPLAIN WHY YOU BELIEVE THE BETA USED IN THE CAPM DOES NOT ADEQUATELY CAPTURE CHANGES IN RISK.

A. The CAPM uses a beta variable to measure the risk of the company studied relative to the market. In my view, this beta is highly subjective and can only be used with the utmost care. Since the beta is calculated with historical returns relative to market returns, it is very possible, and in fact quite likely, that sudden changes in a company's stock price will not be captured in the beta, thereby producing meaningless answers. If, for example, the beta used in the analysis was calculated over an extended time period, such as how Value Line calculates its beta, and then a company suddenly encountered severe financial problems, the CAPM would produce meaningless results as the calculated return on equity would be grossly low.

An example of the problem with beta can be seen in the situation involving Countrywide Financial, which was the world's largest independent residential mortgage lender and service company. Countrywide has symbolically become the poster child for the credit meltdown that has now occurred in the marketplace thereby setting off recession worries for the entire country. The August 24, 2007 edition of Value Line states that Countrywide's stock price had fallen 54% since its May 2007 report. However, even with this price decline, the calculated

beta for Countrywide was just 1.15 as of Aug. 24, 2007 meaning that Countrywide was perceived as being only 15% more risky than the overall stock market. Given the precipitous drop of Countrywide and its results, including a wide credit meltdown resulting in thousands of homeowners losing their houses at that point in time, it is hard to believe that Countrywide's beta was just 1.15. Applying this beta in a CAPM can provide an absurd result.

Most importantly, I urge the Commission to consider how each of them, individually, looks at investments and apply the same reasoning to discerning the validity of the DCF and CAPM models. When a person is contemplating making an investment, that person will consider both the short-term and long-term returns in making that investment. With the DCF, the short-term return is represented by the current dividend yield and the long-term growth return is represented in the growth of expected dividends. As a result, the DCF is a practical "real-life" model that is used by investors throughout the world each and every day. The CAPM, on the other hand, is a pure academic model that depends on an assumed risk premium and risk-free rate to arrive at a return on equity estimation. Investors simply do not use such an academic model in their daily "real life" decisions.

IV. ACCOUNTING ADJUSTMENTS

Q. HAVE YOU REVIEWED THE ACCOUNTING ADJUSTMENTS REQUESTED BY THE COMPANY IN THIS PROCEEDING?

A. Yes. However, I have not completed a full audit of the Company's application in this case as has the Office of Regulatory Staff (ORS). My accounting review was rather narrow. I am aware that the ORS has made a thorough audit of the DEC application.

Q. WHAT SPECIFIC ACCOUNTING ADJUSTMENTS MADE BY THE COMPANY DO YOU OPPOSE?

A. I disagree with the following accounting requests of DEC in this case:

- the failure to make a normalization adjustment made by the Company;
- an increase in storm expense normalization of approximately $8.7 million; and
- the request for an additional $2.6 million related to pension expenses.

Q. PLEASE EXPLAIN YOUR CONCERN REGARDING DEC'S FAILURE TO MAKE A NORMALIZATION ADJUSTMENT AND ITS IMPACT ON THIS CASE.

A. In its application, DEC states that $100 million of the requested increase in revenues of $220 million is due to the fact that the Company experienced lower than normal test years sales volumes and the fact that DEC incurred various other expenses. To be specific, DEC stated the following in the application:

> To put this investment in perspective, approximately 55 percent of the total revenues requested in this case (or $120 million) is associated with the costs Duke Energy Carolinas has incurred—and is still incurring—related to new and existing plants, power delivery wires and related systems and infrastructure used to serve our customers.
>
> The remaining approximate $100 million of the rate increase reflects the impact of the Company's lower sales volumes during the Test Period and also reflects the net effect of various increases and decreases to certain items of cost. (p. 6 of Application)

Unfortunately, DEC did not separate how much of the $100 million additional costs was due to lower test year sales volumes and how much was due to various other costs. However, a review of the Company's North Carolina case led me to believe that approximately 1/3 of the increase in this case was due to the lack of test year sales normalization in this case. During discovery in this case, I received a response from an interrogatory that SCEUC submitted to DEC in which the Company stated $79 million of the above-stated $100 million was a result of the lower sales volumes that occurred in the test year.

Q. WHAT IS THE IMPACT OF DEC'S FAILURE TO NORMALIZE ITS TEST YEAR SALES IN THIS CASE?

A. It permits the Company to request its ratepayers to pay an additional $79 million they would not otherwise be required to pay.

Q. WHAT WOULD HAPPEN IF DEC WERE ALLOWED TO SET RATES ON TEST YEAR SALES THAT WERE LOWER THAN WOULD OTHERWISE BE CONSIDERED NORMAL?

A. DEC would over-earn in years where annual sales were stronger. In addition, the rates approved in this case would be set too high and, therewith, impede the growth of the state's economy.

It is also important to note that normalization of sales is a two-edged sword. If 2012 had been a banner year for DEC with stellar sales, the test year sales would have been higher than normal and instead of a charge in this case, customers could have received a credit in the revenue requirement.

Q. ISN'T IT TRUE THAT WITHOUT THIS ADJUSTMENT, DEC WILL UNDER-EARN ITS ALLOWED RATE OF RETURN?

A. Not necessarily. If the weather and economy in the coming year are more "normal", DEC will not under-earn its allowed rate of return. It is important to note that utility regulation gives utilities the chance, but not the absolute right, to earn an allowed rate of return. Prudent management will give the Company as much of a chance to over-earn as to under-earn.

Q. CAN YOU PROVIDE AN EXAMPLE OF HOW DEC WILL OVER-EARN IN THE FUTURE IF THE COMMISSION ACCEPTS DEC'S PROPOSAL NOT TO NORMALIZE TEST YEAR SALES?

A. Yes. In a "normal" year, the manner that DEC recovers its revenue requirement can be summed up in the following formula:

Billing Units X Rates = Revenue Requirement

Let's suppose, for simplicity sake, that the test year sales were 10% lower than Duke would have experienced in an otherwise normal year. Under this situation, the above formula becomes as follows:

(.9) X Billing Units X Rates = Revenue Requirement

Under the above example, DEC cannot recover its revenue requirement because test year sales were lower than "normal". As a result, the above formula must be simplified as follows:

Billing Units X Rates = Revenue Requirement / 0.9

Any value divided by 0.9 is the same as multiplying the value by 1.11. Hence, DEC's revenue requirement in this example would be 11% higher than "normal" because of the use of lower than "normal" test year sales.

Q. WHY IS IT IMPORTANT THAT THE COMMISSION NORMALIZE DEC'S TEST YEAR SALES IN THIS CASE?

A. The current case is the last general rate case expected to be filed by DEC for several years. If the Commission grants DEC's request not to normalize sales, DEC has the opportunity to over-earn each year until its next rate case.

Q. WHAT IS YOUR TEST YEAR NORMALIZATION ADJUSTMENT TO THE $220 MILLION REVENUE REQUIREMENT REQUEST OF DEC?

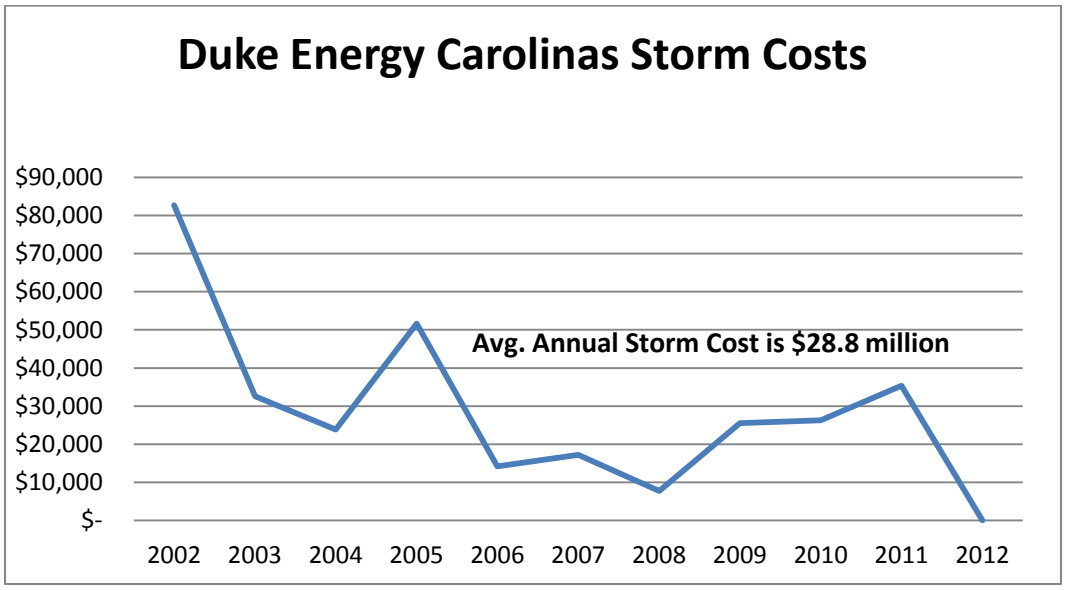
A. My recommendation to the Commission is that it reduce Duke's request in this case by $79 million to account for lower than normal test year sales. With the South Carolina economy enduring a 5-year slowdown, the Company could have mitigated this rate increase.

Q. PLEASE EXPLAIN WHY YOU OPPOSE THE COMPANY'S REQUEST FOR AN INCREASE IN STORM EXPENSES OF APPROXIMATELY $8.7 MILLION.

A. In Docket No. 2009-226-E, DEC was allowed to include a charge in base rates to establish a storm reserve for South Carolina retail consumers. As of March 31, 2013, the storm reserve totaled $15.8 million.

Below is a chart showing DEC's actual storm expenses over the past 10 years.

Chart 2: DEC South Carolina Storm Costs



In calculating the requested $8.7 million storm expense, DEC averaged its costs over the past ten years, adjusted these costs for inflation, subtracted out the costs for the most recent year, and then apportioned the remaining costs to South Carolina. The result was $8.7 million. However, as noted above, DEC was allowed a storm reserve fund in its 2009 rate case and, at present, the reserve is $15.8 million. Furthermore, DEC has property insurance that totals $650 million for each occurrence. This insurance covers storm damage to plants and buildings, but it does not cover expenses related to the restoration of transmission and distribution lines.

Given the fact that DEC has such a storm reserve already in place and the amount is about double the typical annual storm cost allocated to South Carolina and the Company has storm insurance for plants and buildings, DEC's storm reserves are adequate to address its needs. If the Company experiences a serious storm that depletes the storm reserve funds, DEC always has the option of filing for emergency rate relief from the Commission. Hence, my recommendation is that the Commission disallow this extra $8.7 million in storm expenses.

Q. DO YOU HAVE ANY CONCERNS REGARDING THE COMPANY'S PENSION PLAN?

A. Yes. I do not believe ratepayers should be responsible for the Company's defined benefit plan. I believe DEC should replace its defined benefit plan with a defined contribution plan.

Q. PLEASE EXPLAIN YOUR CONCERN WITH DEC'S DEFINED BENEFIT PLAN.

A. For regulated utilities, defined benefit plans put 100% of the risk of under-earning the assumed rates of return for the portfolio investments on ratepayers and not stockholders. As capital returns continue to fall, utilities such as DEC will ask regulators for higher and higher rates to pay for pension funding.

Q. DO YOU HAVE ANY EVIDENCE THAT DEC'S ACTUARIAL ASSUMED RATE OF RETURN HAS FALLEN AND IT IS REQUESTING HIGHER RATES FOR ITS PENSION FUNDS?

A. Yes. In investigating DEC's request for an additional $2.6 million (adjustment no. 6 in DEC Witness Shrum's pre-filed testimony) in pension costs this case, DEC made the following statement:

> The 2013 Qualified Pension Benefit numbers increased from the 12 months ended June primarily due to the increasing asset loss amortizations being recognized. These losses are from 2008 and are being amortized into expense over 5 years. Also continually declining interest rates resulted in a lower discount rate being used resulting in an increased obligation and additional actuarial losses amortization being recognized. The higher percentage increase in DE Carolinas versus the percentage increase in amounts from DEBS is a result of reflecting the expected transfer of DEBS employees to DE Carolinas effective 1/1/2013. (underline added)
>
> Source: DEC response to ORS 19-1.

This statement alone provides evidence that lower capital costs are currently costing ratepayers higher and higher rates. Considering that many South Carolinians either have no retirement savings at all or have defined contribution plans, I do not believe it is appropriate to ask consumers to pay for a highly desired defined benefit plan that very few consumers in South Carolina enjoy.

Q. HOW WIDESPREAD IS THE USE OF DEFINED BENEFIT PLANS?

A. As of Aug. 2010, only 17% of the Fortune 100 firms offered a defined benefit plan. Such a low percentage of companies offering a defined benefit plan is a sharp contrast to 1998 when 67% of Fortune 100 firms had defined benefit plans.

Non-regulated companies have realized the risk of offering a defined benefit plan and shifted that risk to employees by moving away from defined benefit plans to defined contribution plans. In my view, the defined benefit plans for utility employees should be replaced with defined

contribution plans that put the risk of plan underperformance on stockholders and not ratepayers.

I do not oppose the continuation of the defined benefit plan, as long as stockholders - and not ratepayers - are responsible for assuming the risk of the pension plan under-earning its allowed rate of return in the future.

My recommendation is the Commission disallow the $2.6 million in pension expenses requested by DEC in this case.

Q. WHY DO YOU OPPOSE INCENTIVE PAY FOR DEC EXECUTIVES?

A. The seasonally adjusted unemployment rate in South Carolina as of April 2013 is 8.0%. I simply do not believe it is proper for DEC to ask ratepayers struggling in a difficult economy to pay higher rates to provide utility employees incentives to do their jobs.

Q. DO YOU HAVE ANY FURTHER ACCOUNTING ADJUSTMENTS IN THIS CASE?

A. Not at this time. However, the ORS has a number of accountants that have performed a detailed audit of which I was not involved. As a result, I reserve the right to review the ORS's accounting adjustments in this case and amend my recommendations in the future based on the ORS findings.

Q. MR. O'DONNELL, BASED ON YOUR RECOMMENDED RETURN ON EQUITY AND YOUR ACCOUNTING ADJUSTMENTS, WHAT IS YOUR RECOMMENDED REVENUE REQUIREMENT IN THIS PROCEEDING?

A. My recommendation is that the Commission approve a rate increase to DEC of approximately $55 million in this case. My recommended revenue requirement is roughly 25% of DEC's request in this case.

Q. HAVE YOU EXAMINED YOUR RECOMMENDED ROE IN LIGHT OF THE STRAIN THE HIGHER ELECTRIC RATES WILL PLACE ON SOUTH CAROLINA CONSUMERS?

A. Yes, I examined the impact my recommendation would have on residential consumers as well as the potential impact on the state's growth rate and unemployment.

Q. PLEASE EXPLAIN HOW YOUR RECOMMENDED RATE INCREASE AND DEC'S REQUESTED RATE CHANGES WILL IMPACT THE TYPICAL DEC RESIDENTIAL CONSUMER.

A. According to information taken from the United States Energy Information Administration, the typical DEC residential customer in South Carolina uses 1,456 kWhs a month. Based on this usage, the impact to residential consumers between the Company's request and my recommendation in this case can be seen in Table 3 below.

Table 3: Impact of Rate Increases to DEC Residential Consumer

	Annual Cost ($)	Annual Increase ($)
Current Rates	$1,733.02	
Requested Rates	$1,998.92	$265.90
SCEUC Recommendation	$1,798.94	$65.92

DEC's rate increase in this case is equivalent to roughly 3 months of auto insurance to the typical South Carolina motorist; approximately 4 tanks of gas for that same South Carolina motorist; and roughly one and one-

half weeks' worth of groceries for a family of 4. In comparison, my recommendation would raise rates to be equivalent to roughly 1 month of auto insurance; 1 tank of gas; and about 3 days of groceries for the typical family of 4. In addition, a recent study by Bankrate.com, which was published by CNN, indicated that 76% of Americans live paycheck to paycheck with little to no emergency savings. The Company proposal in this case to raise rates as high as requested will have a negative daily impact on South Carolinians through DEC's service territory.

Quantifying the impact on the state as a whole is a much more difficult task. It is easy to understand that the Company's 14.4% rate hike request would have a negative impact on the state's ability to grow. To help understand the impact that electric price increases have on a state's ability to grow as well as its unemployment rate, I have included a study, which is found in Appendix D, from the University of Kentucky that examined how electric price increases affected Kentucky's economy. One of the findings of the study is as follows:

> A 25% electricity price increase is estimated to reduce the GSP growth rate from 3% to 2.30% in the long run. The price increase is estimated to reduce employment growth from 1% to 0.61% in the long run. (p. 2 of report)

By extrapolating the results of the Kentucky study to South Carolina, DEC's request in South Carolina would reduce the South Carolina GDP growth rate from 2.7% experienced in South Carolina in 2012 to 2.28%. In addition, the 1.3% growth in employment in South Carolina would fall to 1.1% thereby eliminating as many as 4,400 new jobs for South Carolinians.

The overall point to be made in this study is that, without a doubt, this rate increase by DEC will have a negative impact on consumers and the state's economy.

Q. IF THE COMMISSION ACCEPTS ALL YOUR ADJUSTMENTS IN THIS CASE, WHAT WOULD BE THE CUSTOMER CLASS CHANGES?

A. Accepting all of my adjustments, the rate increase on each customer class is found on Table 4 below.

Table 4: SCEUC Recommended Customer Class Rate Changes

	DEC Requested Inc (%)	SCEUC Proposed Inc. (%)
Residential	16.34%	4.05%
Commercial		
Rate GS	13.29%	3.30%
Rate OP-G	14.81%	3.67%
Total	13.99%	3.47%
Industrial		
Rate I	17.13%	4.25%
Rate OPT-I	14.00%	3.47%
Total	14.36%	3.56%
Lighting	15.88%	3.94%

V. RATE DESIGN

Q. MR. O'DONNELL, WHAT IS A COST OF SERVICE STUDY AND WHY ARE THE RESULTS OF SUCH A STUDY RELEVANT IN THIS PROCEEDING?

A. A cost of service study is the starting point for any rate design analysis. Before any changes are made to customer class rates, the current cost of serving each customer class and the return which the Company earns on service to that class must be determined. Once these costs have been determined, customer class rates can be increased or decreased in order to bring the resulting class rates of return in line with the costs incurred in serving each class.

Q. HOW IS A COST-OF-SERVICE STUDY PERFORMED?

A. The first step in performing a cost of service study is to determine the appropriate test year for which all revenues, expenses, and utility plant investment are based. In the case of DEC, the most recent test year was for the 12 months ending June 30, 2012.

The next step in performing a cost-of-service study is to ascertain the proper level of revenues and expenses to use in this analysis. It is the responsibility of the analyst to ascertain that the revenues and expenses used in the analysis are representative of what the utility can expect on an on-going basis. Since revenues typically do not vary by a great deal from year-to-year, little adjustments are made in this area. Expenses, on the other hand, can vary considerably so careful consideration must be made with each expense.

Once the revenues and expenses have been adjusted so that they are representative of what the utility reasonably achieved in the test year, the analyst then allocates these revenues and expenses to each of the customer classes. Allocating revenues is a relatively straightforward task since all major utilities, such as DEC, normally retain detailed utility revenue accounts for each customer class. Allocating expenses is, however, more difficult because all the expenses are commonly incurred expenses for all customers of the electric distribution system. To allocate these expenses, the analyst must use the allocation factors that are based on factors such as annual usage, demand usage, number of customers, etc. Allocating expenses in this manner is normally called "functionalization" of expenses as the process involves arranging the expenses according to major electric utility functions, such as generation, transmission, and distribution.

The allocation of operating expense items requires careful consideration as to how these expenses and investments are incurred and utilized and how best to spread these costs. It is very important that the analyst allocate the given expense by the way such cost is incurred or in the manner in which these expense items are utilized. For purposes of simplicity and example, consider the situation with postage expenses. The vast majority of postage expenses are incurred in sending monthly bills to consumers. Since each consumer gets a bill in the mail, it makes sense to allocate postage expenses by the number of customers in each rate class. Thus for postage expenses, residential customers would bear the largest portion of this expense since that class has the largest number of individual customers.

Operating expenses can be classified into five major groups: production, transmission, distribution, sales, and administrative and general (A&G) expenses. The method of allocation for each of these five groups will vary as to the way in which these expenses are incurred by the electric utility.

Once the revenues and expenses have been determined by customer class, an income statement is essentially created for each customer class. From this income statement, income taxes can be calculated and then the net income for each customer class is determined.

The next step in the cost-of-service study is to allocate the utility's net plant investment, which is defined as gross plant less depreciation, in a cost-causation manner similar to how the analyst allocated expenses. As was the case with expenses, net plant investment, otherwise known as the rate base, is allocated in the manner in which the utility incurs the cost. There are three major types of utility plant investment that require allocation: generation, transmission, and distribution. Of these types of investment, generation investment is generally the largest investment. As the largest investment, allocation of generation is critically important in the calculation of the cost of service to each customer class.

The last step in the cost-of-service study is to divide the net income for each customer class by the rate base for each class to derive the rate of return earned on service for each customer class. The resulting percentage rate of return for each customer class provides the analyst with a gauge of the profitability of service to each customer class.

Q. DO YOU AGREE WITH ALLOCATING GENERATION INVESTMENT BY THE COINCIDENT PEAK?

A. Yes. Since DEC builds generating plants to meet the peak demand on its system, it makes sense to allocate generation investment by the coincident peak ratio.

Q. DOES THE COINCIDENT PEAK METHOD REFLECT THE MANNER IN WHICH DEC'S CUSTOMERS USE ELECTRICITY?

A. Yes. DEC has three major customer classes: residential, commercial, and industrial. Of these three classes, the residential class is the most temperature-sensitive and time-sensitive class. Put simply, when the temperature rises outside the home, residential consumers respond by running their air conditioners more frequently. The time at which residential consumers use the most electricity is, typically, the late afternoon hours of a hot summer day when workers come home from work. To accommodate the need for electricity, DEC must ramp up its more expensive generating plants to meet this summer peak demand.

Industrial consumers, on the other hand, keep their energy consumption relatively level as these customers are much less sensitive to temperature fluctuations than are residential consumers. Furthermore, it is often very costly for a large manufacturer to ramp up and down its manufacturing operations due to the stresses that such variations place on manufacturing equipment.

In the current case, the rates proposed by DEC are based upon the coincident peak (CP) cost allocation methodology that does reflect the fact that the generation plant constructed by the Company is built to meet the Company's peak demand. For the reasons set forth above, DEC's use of the coincident peak allocation methodology is very appropriate for use in the Company's cost of service study in this proceeding.

Q. HAVE YOU REVIEWED DEC'S PROPOSED RATE DESIGN FOR THE OPT CLASS IN THIS CASE?

A. Yes, I have.

Q. PLEASE DESCRIBE THE ATTRIBUTES DEC IS SEEKING IN ITS PROPOSED RATE DESIGN.

A. In the table below is the proposed rate increases by DEC for the OPT class.

Table 5: DEC Proposed Rate Impact for OPT

	DEC Proposed Rates
Facilities Charge	12.05%
Demand Charges	
Summer On-Peak Demand Charge	
First 2000 KW	25.45%
Next 3000 KW	25.45%
All KW over 5000 KW	25.45%
Winter On-Peak Demand Charge	
First 2000 KW	25.45%
Next 3000 KW	25.45%
All KW over 5000 KW	25.45%
Economy Demand	25.45%
Energy Charges	
On-Peak	14.08%
Off-Peak	1.52%

The above-stated rate increases attempt to put almost the entire rate increase on customers that use power during the on-peak periods. Such a rate design appears to be an attempt by DEC to recover all of its fixed costs through demand and on-peak energy as opposed to the more variable off-peak energy rate. While I certainly understand DEC's rationale for this rate design, I believe the Company has gone too far in its attempt to

minimize its own risk. The proposed rate design by DEC will be a hardship on customers that have little ability to shift load to the off-peak hours.

Q. DO YOU AGREE WITH DEC'S PROPOSED RATE DESIGN FOR THE OPT CLASS?

A. Overall, I agree with the general direction as proposed by DEC in that customers that can move load should be encouraged to do so and, thereby, keep all rates lower as the utility construction needs are lessened. However, DEC's proposal in this case will actually harm customers that run single shifts, for example, with production occurring mainly during on-peak business hours. To protect those customers, I recommend that the rate design be slightly amended to lower the demand rate increase and increase the balance of the class revenue requirement by a proportionately higher increase in energy rates.

Q. PLEASE EXPLAIN WHAT YOU MEAN BY "PROPORTIONATELY HIGHER INCREASE IN ENERGY RATES."

A. The revenue requirement that I am recommending in this case is significantly lower than the $220 million revenue increase sought by DEC. As a result, my rate design is based on the revenue requirement I find appropriate in this proceeding. Below is my recommended rate design for the OPT rate.

Table 6: SCEUC Recommended OPT Rate

	Current Rates	SCEUC Proposed Rates	%
Facilities Charge	$38.83	$43.51	12.05%
Demand Charges			
Summer On-Peak Demand Charge			
First 2000 KW	$15.1113	$15.6855	3.80%
Next 3000 KW	$13.4049	$13.9143	3.80%
All KW over 5000 KW	$10.8054	$11.2160	3.80%
Winter On-Peak Demand Charge			
First 2000 KW	$8.8471	$9.1833	3.80%
Next 3000 KW	$7.3698	$7.6499	3.80%
All KW over 5000 KW	$5.4688	$5.6766	3.80%
Economy Demand	$1.2000	$1.2456	3.80%
Energy Charges			
On-Peak	0.058021	0.059414	2.40%
Off-Peak	0.027483	0.027689	0.75%

Q. DO YOU HAVE A RATE DESIGN FOR THE MP RATE?

A. Yes, my recommendation for the MP rate is that it follow the same design principles as that of the OPT rate. My specific rate design for Rate MP is as follows:

Table 7: SCEUC Recommended MP Rate

	Current Rates	Proposed Rates	% Change
Basic Fac. Chg.	$38.83	$43.51	12.05%
Demand			
Summer On-Peak			
Transmission Level	$13.3337	$13.8404	3.80%
Distribution Level	$14.4485	$14.9975	3.80%
Winter On-Peak			
Transmission Level	$7.5922	$7.8807	3.80%
Distribution Level	$8.7070	$9.0379	3.80%
Excess Demand	$1.2000	$1.2456	3.80%
Energy			
Gen. Svc.			
On-Peak	$0.057856	$0.0592	2.40%
Off-Peak	$0.027410	$0.0276	0.75%
Ind. Svc.			
On-Peak	$0.058021	$0.0594	2.40%
Off-Peak	$0.027460	$0.0277	0.75%

VI. SUMMARY

Q. MR. O'DONNELL, PLEASE SUMMARIZE YOUR TESTIMONY.

A. DEC's requested rate increase in this case is excessive, unnecessary, and burdensome on ratepayers in the State. My specific recommendations in this case are as follows:

- the Company's allowed return on equity should be set at 9.0%;
- the capital structure used for ratemaking purposes should consist of 53% common equity and 47% long-term debt;
- the overall rate of return that DEC should be allowed to earn in this proceeding is 7.26%;
- the Company should normalize its test year sales, thereby reducing the rate increase by $79 million;
- the Company's request for an extra $8.7 million in storm expenses should be disallowed;
- the Commission should disallow DEC's request for an additional $2.6 million in pension costs; and
- the rate design for MP and OPT should be modified to reduce the demand impact for on-peak usage.

The rates that I am recommending in this case are just and reasonable to all customer classes and will promote economic development and job attraction and retention in South Carolina while also allowing DEC to maintain financial integrity.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.